EM-22.1

Category: **Loan Portfolio Management**
Topic: **Portfolio Planning & Analysis**
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Overview

The *Portfolio Planning & Analysis* topic provides guidance on evaluating loan portfolio planning and analysis processes at Farm Credit System banks and associations. It also includes direction on examining credit-related management information systems (MISs) and loan portfolio stress testing, which are key components of portfolio analysis and planning. The portfolio planning process provides the board and management a mechanism for defining and communicating expectations for the loan portfolio. The loan portfolio plan should identify portfolio objectives and strategies and establish a framework to achieve plan objectives through the direction and control of lending operations. Portfolio plans are often included in the institution's business plan. A sound credit-related MIS is an important control for ensuring the institution achieves loan portfolio plan objectives. The MIS should accurately track metrics to identify if objectives are being met and detect material variances the board and management need to address.

Loan portfolio stress testing plays a critical role in planning by providing a forward-looking assessment of risk, which assists in establishing the institution's risk appetite and risk mitigation plans. When done effectively, loan portfolio stress testing is also a means for obtaining a better understanding of an institution's risk profile and provides valuable information for use in key portfolio management decisions. *Note: The examination guidance in this section is focused on loan portfolio stress testing. Guidance for stress testing in other areas of operations (e.g., investments, interest rate risk, liquidity, capital, earnings, derivatives) is addressed within those respective Examination Manual topics. Integration of institution-wide stress testing efforts and governance over stress testing programs is addressed in the Stress Testing Framework procedure within the Direction & Control of Operations Examination Manual topic.*

Refer to the Farm Credit Administration's (FCA) LPM Publication and the Office of the Comptroller of the Currency (OCC) Handbook - LPM Booklet for additional background and information on loan portfolio planning and analysis. In addition, FCA's Informational Memorandum on Stress Testing Expectations dated September 8, 2023, provides guidance on stress testing.

Examination Procedures and Guidance

General

1. Planning & Strategies:

Evaluate the institution's credit culture and loan portfolio planning processes.

Guidance:

Loan portfolio planning is a key component of the business planning process and is an essential part of effective loan portfolio management (LPM). Institutions may perform and document the results of portfolio planning in different ways. This may include having separate credit and marketing plans or addressing these components directly within the overall business plan. This procedure focuses on the portfolio planning process and factors considered by the board and management in developing their plans. Refer to the *Business Strategy & Planning* Examination Manual topic when examining the business plan and loan-related projections, objectives, and strategies. Generally, loan portfolio planning considers what kind of portfolio the board and management want to build and how to get there. Accordingly, processes for setting loan portfolio projections and objectives should be consistent with the board's risk tolerance and the local lending environment and establish a framework and strategies to achieve them.

When evaluating processes for portfolio planning, it is important for examiners to understand the institution's credit culture and how that culture contributes to appropriate and cohesive LPM planning consistent with the institution's risk profile and the board's risk appetite.

Credit Culture: An institution's credit culture is the unique combination of written and unwritten policies, practices, experiences, and attitudes that define and establish acceptable lending behavior. The institution's credit culture impacts all aspects of its operations and its LPM practices in particular. The institution's culture, risk profile, and credit strategies and practices should be linked and reinforce each other. Defining the credit culture begins with the board's planning process and is implemented through board and management direction, monitoring, and control of lending operations. Success is achieved by effectively communicating and implementing direction through plans, policies, procedures, and underwriting guidance.

Credit culture can vary considerably between institutions. Some approach credit very conservatively, focusing primarily on well-established borrowers and those with robust repayment capacity. Growth-oriented institutions may approach lending more aggressively, lending to borrowers who pose higher repayment risk. The competitive environment in the institution's local service area also influences the culture and approach to lending. Cultural differences are often grounded in the board and management's objectives for asset quality, growth, and earnings. Emphasizing one of these objectives over another does not, in and of itself, preclude satisfactory performance in all three. However, the emphasis will influence how lending activities are conducted and may prompt the need for enhancements to lending controls. For example, an institution driven to achieve aggressive growth targets will generally require more detailed credit direction and stronger controls to properly manage credit risk. The OCC Handbook - LPM Booklet (p. 11-13) provides additional information on credit culture and risk profile.

Evaluative questions and items to consider when examining credit culture include:

- ***Definition and Consistency:*** **Do the board and management have a defined credit culture? Is the day-to-day credit culture consistent with the defined credit culture?** The credit culture should be clear and incorporated within the mission statement, business plan goals and objectives, and overall risk profile and appetite. Credit culture should also be observed through credit practices, staff training and communication, and policies and procedures. Credit guidance and practices should be consistent with the defined culture. Differences in the defined credit culture and the day-to-day credit culture could be caused by various factors, including a lack of communication, management indifference toward the defined

culture, segregation of duties or delegated lending authorities conflicting with the risk appetite, or a performance management system that rewards behaviors inconsistent with the defined credit culture. Management should periodically evaluate and report to the board on staff's understanding of and conformance with the stated credit culture. Achieving consistency between the stated and actual culture can be especially challenging after a merger and thus warrants specific examination consideration.

- ***Adjustments and Communication:*** **Do the board and management periodically review the defined credit culture and adjust as needed? Are changes effectively communicated to staff?** The board and management should periodically evaluate the appropriateness of the defined credit culture and adjust it, as needed. Adjustments could be needed for various reasons, including changes in the economy, industries financed, or the institution's financial condition and performance. Other reasons for an adjustment could be changes in the board or senior management resulting in a different credit culture, or staff experience and skill level may factor into the level of risk the board and management is willing to accept. Periodic cultural adjustments should be communicated to lending staff in a clear and consistent manner (e.g., training, guidance).

Portfolio Planning: When developing a loan portfolio plan, the board and management should evaluate the institution's operating environment and risks, including exposure to possible distressed industries. The board and management should also identify measurable objectives and strategies to guide the portfolio and achieve desired results. As noted above, loan portfolio plans are often part of the overall business plan. A key part of loan portfolio planning is monitoring and reporting on achievement of planned results. See the *Reporting* procedure in the *Business Strategy & Planning* Examination Manual topic for evaluating reporting on projections, objectives, and strategies.

Evaluative questions and items to consider when examining loan portfolio planning processes include:

- ***Assessment:*** **Do loan portfolio planning processes provide for a reasonable assessment of the operating environment, portfolio conditions and risks, and possible distressed industries?** Planning processes should provide an avenue for determining a realistic outlook for future loan portfolio performance. This should include consistent processes for risk analysis and assessments that consider all aspects of the portfolio, including, but not limited to, commodity concentrations, including unique or specialized industry segments, sources of significant growth, changes to portfolio composition, and increases in criticized and adverse assets. Staffing levels and expertise should also be considered, particularly as portfolio characteristics change. Processes should also incorporate various information sources and include input from appropriate levels of management and staff (e.g., senior management, lending staff). Loan portfolio planning processes should analyze economic conditions in distressed industries to identify the underlying drivers for the distressed conditions, assess how long the industries are expected to remain unprofitable, and project the impact on the portfolio over the planning horizon. This can be accomplished by identifying the institution's exposure, preparing credit quality and loss projections, completing robust stress testing, and reviewing portfolio performance during past downturns. FCA's Informational Memorandum on Portfolio Management in Volatile Times dated January 29, 2015, provides additional guidance on servicing and portfolio management expectations when an industry is distressed.

- ***Projections, Objectives, and Strategies:*** **Do processes provide for effectively setting measurable loan portfolio projections, objectives, and strategies?** Processes should ensure projections, objectives, and strategies are clearly communicated, reasonable, and achievable. The institution's risk profile, risk appetite, and marketplace conditions should be considered when establishing projections and quantifiable objectives, including portfolio quality, portfolio composition and diversification, loan growth, and profitability. Collectively, these projections and objectives should describe the type of portfolio the board and management want to build or maintain. The board and management should then identify strategies to achieve their objectives. Strategies should address any significant potential or emerging risks. Growth strategies or initiatives and any resulting changes in portfolio characteristics should be reasonable and consistent with objectives. The following should be considered when determining projections, objectives, and strategies:

    - Portfolio quality, including its relationship to past performance goals and projections.
    - Goals for loan growth and potential sources of new loans.
    - Growth outside the institution's territory and in capital markets activities.
    - Risk parameters and portfolio diversification goals.
    - Management of high-risk loan products, customers, or industries.
    - Impact of distressed industries on the loan portfolio.
    - Identification of target markets and industries.
    - New product and business-line goals.
    - Loan pricing.
    - Staff resources and expertise.

- ***Accountability:*** **Have key strategies of the loan portfolio plan been assigned to specific personnel and does the institution have a contingency plan?** Sufficient processes should exist to ensure accountability for plan implementation and results. Key strategies of a loan portfolio plan may include credit quality improvement, targeted growth segments, or servicing strategies for distressed industries. The board and management should formulate a contingency plan to identify alternative actions if the loan portfolio plan falters. This is particularly important for institutions with higher-risk portfolios and those projecting material growth or credit quality changes.

2. Information Systems & Data:

Determine if information systems and data integrity allow for reliable and effective loan portfolio risk monitoring, analysis, and reporting.

Guidance:

A sound, credit-related management information system (MIS) is critical for ensuring reliable and effective loan portfolio risk monitoring, analysis, and reporting. An effective MIS encompasses the collective processes used to capture, transmit, store, retrieve, analyze, manipulate, and display the information needed in decision-making processes. The technology aspect may be internally managed or provided by a district bank or other service provider, but in most cases, will involve a combination of sources. Refer to the *Third-Party Risk Management* procedure in the *Direction & Control of Operations* Examination Manual topic for information on examining the institution's outsourcing processes. While the processes used may vary, the MIS must ultimately provide

sufficient data, information, and reports to identify and monitor all primary credit risks in the loan portfolio.

The MIS must have the capacity to provide timely information on the condition and performance of the loan portfolio, including all segments of the portfolio. A critical component of this is individual loan data. If the institution lacks accurate and complete loan data, the ability to effectively manage and report on the loan portfolio is compromised. Consequently, a dynamic data verification process that focuses on completeness and accuracy of loan information is a necessity. Refer to FCA's LPM Publication (MIS section on pages 16-17) for additional background and information. This section is focused on MIS systems for loan portfolios. To examine overall information technology systems, refer to the *Information Technology & Security* Examination Manual topic.

Evaluative questions and items to consider when examining the adequacy of credit-related MISs and data integrity include:

- ***Adequacy of Information Systems:*** **Do MISs contain sufficient data and analytical capabilities to conduct portfolio analyses (including stress testing) and facilitate management and board reporting?** Timely, accurate, and sufficiently detailed information must be available to facilitate clear and effective analyses and reporting. Technology resources, in particular, reporting software and tools, should be sufficient for generating the necessary analyses and reports. The MIS should be capable of generating reports in various ways and at multiple levels to meet various user's needs (e.g., board, management, staff). Management should be able to design its own reports and develop them quickly to respond to a specific need. The MIS should provide sufficient detail and information about individual loan transactions, portfolio segments, and the entire portfolio. This would typically require adequate information in the following areas:

    - Uniform Classification System, performance status, and past due status
    - Risk rating stratification, trends, and migration
    - Loan commitments, including type, amount, and level of usage
    - Loan yield and profitability data (asset segment and portfolio levels)
    - Loan type, maturity, payment frequency, and conditions
    - Loan covenant compliance and defaults
    - Exceptions to policy, underwriting, and documentation standards
    - Sources of loans (e.g., originated, purchased)
    - Credit enhancements (e.g., USDA, Farmer Mac)
    - Off-balance-sheet credit risk exposures
    - Distressed industry and commodity data

- ***Models:*** **Are the models used for credit-related analysis and reporting managed in accordance with the institution's model risk management (MRM) framework and the guidance outlined in FCA's *Model Risk Management* procedure in the *Direction & Control of Operations* Examination Manual topic?** These models should be included in the institution's model inventory, which should accurately represent each model's risk, materiality, and validation status. Model validation, change controls, staffing, separation of duties, and new model development should be consistent with the guidance in the institution's MRM framework and FCA's *Model Risk Management* procedure, recognizing application of this guidance varies based on model risk and materiality. *Note: Examiners completing this procedure should focus on the specific model(s) being used; the overall*

MRM framework is examined using the Model Risk Management procedure referenced above.

- ***Data Integrity Controls:*** **Does the institution evidence a commitment to maintaining data integrity and have adequate processes and controls to validate the reliability of data in the MIS on an ongoing basis?** FCA Regulation 621.15(a) requires the institution to prepare and submit accurate and complete reports of all accounts and exposures to FCA (i.e., data submitted in the FCS Loans2 database). Processes and controls to validate data reliability in the MIS could include management reviews or other risk management reviews. Data integrity should also be considered for audit periodically based on risk assessed, similar to other auditable areas. This would include internal credit reviews addressing data integrity on individual credits. Refer to the *Audit* procedure for examining data integrity audits.

- ***Transaction Testing:*** **Is the data on individual loans accurate and up to date?** The examination of MISs and data should be supplemented as necessary with transaction testing. Testing should determine if policies, procedures, and internal controls are working as intended. Loans and loan-related assets are examined, in part, to determine if the institution is entering and managing its data accurately. As such, FCA's transaction testing is a critical part of the overall evaluation of loan portfolio planning and analysis effectiveness. Some specific data integrity transaction testing objectives are to validate and determine the following:

    - Is loan data in the institution's loan data system accurate, complete, and up to date?
    - Is the data in the Farm Credit System Loans2 (FCSL2) accurate and up to date, as required by 621.15(a)?

3. Audit:

Determine if the institution conducts an effective audit (scope, reporting, and followup) of the portfolio planning and analysis functions.

Guidance:

The internal audit and review program is a key mechanism for ensuring portfolio planning and analysis processes are functioning effectively. The internal auditor or other qualified, independent party should review the adequacy of portfolio planning and analysis processes to ensure compliance with applicable criteria. The audit risk assessment and scope should address portfolio planning topics, and audit or review frequency should be commensurate with the complexity of the institution's operations and risk profile. A reliable audit program provides the board reasonable assurance that portfolio planning is sound and that related reporting is complete and accurate.

Note: This procedure focuses on evaluating the reliability and effectiveness of internal audits and reviews in this topical area. Refer to the *Audit & Review Programs* topic in the Examination Manual for guidance on examining the overall internal audit and review program.

Evaluative questions and items to consider when examining the audit or review of portfolio planning and analysis include:

- ***Audit Coverage:*** **Is there periodic audit or review coverage of portfolio planning and analysis processes and related data integrity?** Audit or review coverage and frequency should be appropriate relative to risks, changes in the operating environment, regulatory

requirements, and periodic testing needs. Coverage should also be consistent with the institution's risk assessment results and annual audit plan.

- ***Scope and Depth:*** **Are audit or review scope and depth sufficient to conclude on the adequacy, completeness, and timeliness of portfolio planning and analysis?** The scope and depth of work, including transaction testing, should cover the primary processes and controls within the area being audited or reviewed and be sufficient to determine if internal controls are functioning as intended and regulatory requirements are met. The scope and depth of coverage should be documented and consistent with the approved audit or review plan and engagement contract (if applicable). Audit or review workpapers should be examined to verify the actual scope and depth of work performed. The workpapers may indicate the scope and depth deviated from what was identified (or implied) in the audit plan. For example, workpapers may indicate the work performed was limited to evaluating the existence of policies and procedures and didn't include reviewing other controls, such as training or reporting, or testing compliance with regulations or institution guidance. If the work deviated materially from the original planned scope, internal audit should notify the board (or Audit Committee, if so delegated) of the reasons for the change. Specific items that should be considered in the audit or review scope include:

    - Portfolio planning and analysis (including stress testing) policies and procedures.
    - Compliance with portfolio planning and analysis policies, procedures, FCA Regulations, and other FCA guidance.
    - Monitoring and control processes (e.g., reporting, management oversight, delegated authorities, separation of duties, MISs and data).
    - Loan portfolio stress testing.
    - Credit-related data integrity, including sufficient transaction testing to ensure established criteria are followed and data is accurate.
    - Management of all significant portfolio planning models (e.g., stress testing), including consistency with the institution's overall model risk management framework.
    - Fraud-related threats and vulnerabilities, as well as anti-fraud controls.

- ***Reliability of Results:*** **Did FCA identify any concerns with audit or review reliability?** It is important to understand the scope and depth of the audit or review being examined, as discussed above, when evaluating audit or review reliability. With this understanding, the following are key considerations when evaluating the reliability of audit or review results:

    - *FCA Testing* – Evaluate the reliability of internal audit or review work by comparing the results to FCA's examination results in this area. This comparison often includes FCA testing transactions that were covered in the internal audit or review (transactions are often loans or loan applications, but may include other types of transactional activity, as well). In addition to the audit or review report, examiners should request and review the workpapers and hold discussions with the auditor to obtain a more thorough understanding of work completed. This can be especially important if the audit or review report is not sufficiently detailed or FCA's

examination work and testing identifies potential concerns. Auditors and reviewers complete line sheets, flowcharts, control matrices, standard work programs, workpaper forms, or other relevant audit evidence when conducting and supporting their work. (IIA Standards 2240, 2300, 2310, and 2320) Workpapers should adequately document the work performed and support the final report. If FCA identifies weaknesses that were not identified in the audit or review, the cause for any discrepancy should be determined.

- *Audit/Review Staffing* – Whether internal or outsourced, auditors and reviewers conducting the work need to be qualified, independent, and objective to ensure reliable results. They should have the right mix of knowledge, skills, and other competencies needed to perform the work. (IIA Standard 2230) Additionally, auditors and reviewers need to be independent of the activities they audit so they can carry out their work freely and objectively. (IIA Standards 1100, 1112, 1120, and 1130) For example, audit and review staff should not be involved in developing and installing procedures, preparing records, operating a system of internal controls, or engaging in any other activity that they would normally review. Examiners should evaluate the staffing on the individual audit or review being examined as part of determining the reliability of results.

- *Institution Review of Work Performed* – The institution should complete an independent review of the workpapers to ensure audit or review objectives and scope were met and the results and conclusions were reliable and supported. (IIA Standard 2340) Examples could include a supervisory review of in-house audit work by the CAE or other audit staff, or a review of outsourced work by the Chief Audit Executive (CAE) or audit coordinator. Examiners should consider whether the institution completed these reviews, and if any concerns were identified, when concluding on audit or review reliability.

- ***Reports:*** **Does the internal audit or review report sufficiently communicate portfolio planning and analysis review results and recommendations, if applicable?** Examiners should consider the following when evaluating the audit or review report:

  - Is the report prepared and communicated in accordance with the institution's guidelines?

  - Is an executive summary or overview included to provide the board with a general conclusion on audit or review results?

  - Is the report accurate, concise, supported, and timely in communicating the audit or review objectives, scope, results, conclusions, and recommendations? (IIA Standards 2330, 2400, 2410, 2420, 2440, and 2450)

  - Are conclusions and recommendations realistic and reasonable, with material and higher risk issues clearly identified and prioritized?

  - Are conclusions and recommendations supported by convincing evidence and persuasive arguments (condition, criteria, cause, and effect)?

  - Do results in the workpapers align with report conclusions?

- Does the report conclude whether the institution adheres to policies, procedures, and applicable laws or regulations, and whether operating processes and internal controls are effective?

- Does the report address potential vulnerabilities to fraud, if applicable?

- ***Corrective Action:*** **Are management responses to audit or review findings in this area reasonable, complete, and timely? Have corrective actions been effective?** Audits and reviews are only effective if corrective action is taken to remedy the weaknesses identified. As such, there should be a reasonable, complete, and timely management response to the audit or review report. Management commitments and agreements or any areas of disagreement should be documented in the report or in a separate memo or tracking system. (IIA Standards 2500 and 2600) If corrective actions are not resolving the issues or concerns in a timely manner, examiners should further investigate the reasons. For example, this could indicate the audit or review did not sufficiently identify the underlying causes or materiality of weaknesses, sufficient resources are not being directed toward corrective actions, or weaknesses exist in the institution's corrective action process, including board oversight of the process.

Examination Procedures and Guidance

Loan Portfolio Stress Testing

1. Model(s) Used:

Evaluate the adequacy of processes and controls to govern the use of loan portfolio stress testing model(s) and determine if the sophistication and capabilities of the model(s) are commensurate with the complexity and risk of the loan portfolio.

Guidance:

Each institution should define a loan portfolio stress testing process and identify objectives that provide the board and management with information to make better risk management decisions. This includes decisions in critical areas such as business planning, setting its risk appetite, modifying underwriting practices, and pricing loans. The objectives of loan portfolio stress testing should guide model development, ensuring the model reflects the institution's business lines, strategies, and risk characteristics. Loan portfolio stress testing models and methodologies should be fit for each institution's intended purpose. The models, methodologies, and processes will vary by institution, ranging from sophisticated, data intensive, vendor-supplied models, to internally developed spreadsheets. Model sophistication and specification should be appropriate for the objectives of the stress testing exercise and the complexity of the portfolio or area being assessed. In some cases, the board and management may rely on multiple models and analytical tools to conduct different facets of its loan portfolio stress testing work. The underlying methodologies used to make projections warrant examiner scrutiny and may justify criticism if the models are judged too simplistic for the complexity of the loan portfolio.

Loan portfolio stress testing models differ in terms of the underlying methodologies. For example, to project credit quality in various stress scenarios, some models apply stress to risk factors in a loan portfolio using simulated borrower financial information. If constructed properly, the stress test scenario can reasonably resemble the actual portfolio. Some models use actual customer financial information. When stress is applied to risk factors, the effects on the credit quality of

individual customers and the portfolio as a whole are projected. Other models do not stress simulated or actual customer financials. Instead, these models rely on applying stress to risk factors and making assumptions on how the stress will affect the Probability of Default (PD) and Loss Given Default (LGD) ratings for customers, portfolio segments, and the portfolio as a whole. PD/LGD migration models are recognized as a viable alternative to borrower-level financial statement stress testing if supported by adequate documentation, analysis, and controls. For all loan portfolio stress testing models, it is important that processes and controls (consistent with the institution's MRM framework) are in place to govern the use of models.

Evaluative questions and items to consider when evaluating loan portfolio stress testing model(s) include:

- ***Model Methodology:*** **Is the underlying methodology used in the loan portfolio stress testing model(s) reasonably supported?** Once the loan portfolio stress testing model has been identified, examiners should examine the methodology used in the model. The most common models involve either stress testing with simulated customer financials, actual customer financials, or assumed PD/LGD migrations. Regardless of the methodology type used, underlying documentation and support should lay out a set of economic and industry risk factors that will drive the change in portfolio conditions and include adequate supporting analysis as to why resulting credit quality and financial indicators are a likely or potential outcome. The following describes common loan portfolio stress testing model methodologies:

    - *Customer Financials* – Models utilizing actual borrower information are preferable (when sufficient high-quality borrower financial data is available), followed by models using simulated borrower financial information. Borrower-level financial statement stress testing can improve the depth and comprehensiveness of stress testing activities and result in less subjectivity being needed to project results.

    - *PD and LGD* – Management should support PD and LGD migrations with analysis that draws upon current borrower financial characteristics and historical portfolio performance during past periods of stress. Models relying on PD and LGD migrations are often less functional because they may lack the ability to analyze the impact of specific stress on the borrower's financial condition. Documentation and supporting analysis of correlations and assumptions are even more imperative to clearly and reliably illustrate the effect of the stress applied to risk factors on PD and LGD ratings, especially as this methodology is more inherently subjective and requires a greater use of judgment. Specifically, documentation should support the assumed migration for each PD and LGD. Management should also document any variation in PD migration assumptions for certain portfolio subsections (e.g., large exposures, specialized industries, unique characteristics) and any variation in LGD migration assumptions based on collateral type (e.g., real estate, chattel, specialized facilities, unsecured). It is a sound practice when using PD and LGD migration stress testing to consider borrower-level financial statement stress testing, at least on the institution's largest loan exposures.

    - *Other* – On certain portfolio segments (e.g., housing, scorecard, smaller agricultural loans) it may not be feasible or cost effective to gather current financial information or construct simulated borrower financial statements. As a result, typical borrower-level stress testing work is impractical. Other processes should be

in place to perform stress testing on these portfolio segments. The sophistication and comprehensiveness of stress testing in these portfolio segments should be commensurate with the significance of these segments to the institution.

- ***Model Complexity & Sophistication:*** **Is the model(s) capable of achieving the objectives of the loan portfolio stress testing exercise?** The model should allow risk to be measured with adequate granularity (e.g., illustrate changes in PD and LGD ratings) versus simply showing migrations in Uniform Classification System classifications. The model should provide projections that show the effect of stress on the loan portfolio. Management should be able to apply multiple shocks simultaneously and reflect the impact on PDs, LGDs, and financial condition and performance. Modeling capabilities should allow management to tailor stress scenarios to the institution's portfolio and major risk factors, and allow stress testing practices to be responsive to changes in portfolio conditions and potential risk. If using multiple models, output should be integrated into an internally consistent and consolidated set of stress testing results. FCA expects the model sophistication, complexity, and capabilities to increase as an institution increases in size or the portfolio becomes more complex or exposed to increasing or additional types of risks.

- ***Model Risk Management:*** **Are the models used for loan portfolio stress testing managed in accordance with the institution's MRM framework and the guidance outlined in FCA's MRM procedure in the *Direction & Control of Operations* Examination Manual topic?** These models should be included in the institution's model inventory, which should accurately represent each model's risk, materiality, and validation status. Model validation, change controls, staffing, separation of duties, and new model development should be consistent with the guidance in the institution's MRM framework and FCA's *Model Risk Management* procedure, recognizing application of this guidance varies based on model risk and materiality. *Note: Examiners completing this procedure should focus on the specific model(s) being used; the overall MRM framework is examined using the Model Risk Management procedure referenced above.*

For additional information, see FCA's Informational Memorandum on Stress Testing Expectations dated September 8, 2023, and Interagency Guidance on Stress Testing dated May 14, 2012. *Note: Examiners completing this procedure should focus on the specific stress testing activity; the overall stress testing framework is examined using the Stress Testing Framework procedure in the Direction & Control of Operations Examination Manual topic.*

2. Data, Risk Factors, Scenarios, & Frequency:

Evaluate the adequacy and integrity of the data used in the loan portfolio stress testing process. Determine whether stress testing scenarios are logical, cover key risk factors, are appropriately documented, and stress testing is being conducted with sufficient frequency and severity.

Guidance:

Loan portfolio stress testing results are only as good as the underlying data used to conduct the analysis. The quality, availability, and comprehensiveness of data must be considered when determining which data sets should be used in a stress test. Importantly, the data used should be representative of the institution's portfolio(s) being stressed. Additionally, management should develop meaningful stress scenarios and explain assumptions related to a range of factors based on the composition of its portfolio. Lastly, the frequency of loan portfolio stress testing should be commensurate with risk levels and conditions but, at a minimum, annually.

Evaluative questions and items to consider when evaluating loan portfolio data, stress factors, scenarios, and frequency include:

- ***Data Type & Quality*: Is the data used in loan portfolio stress tests, whether simulated or actual customer information, accurate and granular enough to meet the objectives of the stress testing activity?** If simulated customer data is used, management should take steps to validate the simulated portfolio resembles the actual portfolio. If actual customer data is used, most of the portfolio needs to have current, consistent, and complete borrower data that does not have material problems or limitations. Generally, the data used in the stress testing process should be of sufficient quality, consistent with management's data definitions, to ensure the information going into the stress testing models is accurate. Management should validate the data accuracy and adequacy used in its stress testing program. Regardless of whether simulated or actual customer data is used, management should document any concerns with data and how the issues were addressed. Additionally, internal credit review activities should evidence whether overall data integrity is reasonable, including the accuracy of assigned PD and LGD ratings. Management should identify whether there are any other major input items that exist for the stress testing model (e.g., collateral values) and assess the integrity of this data and input that feeds the stress testing model.

- ***Risk Factors*: Are risk factors logical and adequately documented?** The underlying documentation of risk factors for each stress scenario and associated assumptions should adequately describe the current economic and financial environment. The degree of stress applied to risk factors should be tailored, as warranted, to the specific industry, loan type (e.g., commercial versus mortgage), and expected economic conditions. Moreover, the stress to risk factors should be applied in a logical and consistent fashion. Key risk factors will vary by institution but may include the following:

    - Major industry concentrations
    - Commodity prices
    - Demand for farm products
    - Input costs
    - Production expectations
    - Farmland and other collateral values (particularly specialty collateral values)
    - Interest rates and spreads (including effects of changing interest rates on capitalization rates and real estate values)
    - Funding costs
    - Patronage paid to shareholders and patronage received from the funding bank
    - Off-farm income
    - State of the general economy and overall macroeconomic factors (e.g., unemployment and inflation rates, contracting or expanding economy)
    - Government policies and programs relating to agriculture
    - Counterparty concentrations
    - Unfunded commitment exposure and subsequent utilization
    - Loan volume trends (stress testing should not assume volume will remain static.

- ***Scenarios:* Are loan portfolio stress testing scenarios reasonable and include at least one severe but plausible scenario?** The depth and breadth of loan portfolio stress testing scenarios and corresponding assumptions and analysis should be commensurate with the size and complexity of the institution's portfolio and risk profile. Management should

perform most-likely or baseline stress testing scenarios to analyze the effects of expected economic conditions moving forward. Stress testing models should show the effects of the stress scenarios over a 3-year or longer horizon. A severe but plausible scenario should be analyzed to gain insight into the institution's risk-bearing ability in a situation of extreme and rapidly escalating stress, even if chance of the scenario occurring is low. Management should not let the timeframes utilized by its stress testing models deter efforts to model severe but plausible scenarios. There may be reluctance to model this scenario as it may be unlikely to occur within the next 3 years. However, the scenario should still be modeled, whether tied to the next 3 years or some other timeframe. When determining if the scenario is severe but plausible, consider:

  - Whether multiple industries, including the largest concentrations, were stressed.
  - If stress was applied for a prolonged period of time.
  - Whether collateral values and borrower financial positions were assumed to have deteriorated significantly.
  - How the stress scenario compared in magnitude to past time periods of actual stress.
  - If there was a sufficient degree of thoughtfulness and creativity employed in devising the scenario, or did the scenario simply reflect conditions that occurred in the past.

- ***Frequency*: Is a comprehensive stress testing analysis of the loan portfolio completed at least annually?** Loan portfolio stress testing should be completed no less than annually. As portfolio and economic conditions change, stress testing activities should be adjusted, as warranted. The frequency of stress testing should be reasonable in relation to the size and complexity of the portfolio and underlying portfolio conditions. In addition to annual, comprehensive loan portfolio stress testing, management should perform ad hoc or targeted stress tests, as warranted, to address specific risk areas of concern (e.g., large loan concentrations, specialized or distressed industries, loans originated under non-traditional credit delivery systems).

For additional information, see FCA's Informational Memorandum on Stress Testing Expectations dated September 8, 2023, and Interagency Guidance on Stress Testing dated May 14, 2012. *Note: Examiners completing this procedure should focus on the specific stress testing activity; the overall stress testing framework is examined using the Stress Testing Framework procedure in the Direction & Control of Operations Examination Manual topic.*

3. Integrating, Reporting, & Using Results:

Evaluate efforts to incorporate loan portfolio stress testing results into business planning and risk management processes and assess the adequacy of loan portfolio stress testing reporting.

Guidance:

A critical element in all stress testing programs is linkage to and integration with the institution's financial systems. To facilitate better risk management decisions, the institution's annual comprehensive loan portfolio stress testing needs to go beyond credit quality projections and show the effect of stress scenarios on financial condition and performance. When the stress testing is ad

hoc or targeted in nature (e.g., testing a specific distressed industry or stressing borrowing bases) it is reasonable these stress testing results may not flow through to the institution's financial statements.

Stress testing programs are incomplete without an effective reporting process. Reporting should be timely and informative. After loan portfolio stress tests are performed and the results are reported, the final step is to utilize the information. Examiners should assess how loan portfolio stress testing information and results were used by the board and management in its planning efforts and risk management activities.

Evaluative questions and items to consider when evaluating loan portfolio stress testing integration, reporting, and using results include:

- ***Integrating with Financial Applications and Models*: Is loan portfolio stress testing adequately linked to, and integrated with, financial applications and models to project the results of loan portfolio stress onto the institution's financial condition and performance?** Stress testing processes should include the capability to take results from stress testing portfolio quality and project the effects on key financial metrics (e.g., allowance for credit losses, capital and capital ratios, earnings and earnings ratios, liquidity and liquidity measures, including effects on funding costs).Whether the process for projecting financial results is performed by some type of vendor or internally developed model or is more manual and judgment-based (relying heavily on numerous management assumptions), the key is that projected financial results accurately reflect projected portfolio quality. Refer to the *Projections* procedure in the *Business Strategy & Planning* Examination Manual topic and the *Planning & Strategies* procedure in this topic for additional guidance on loan portfolio planning and projections. *Note: If an economic capital model is used, stress testing models and processes should be integrated and interrelated with the economic capital model.*

- ***Reporting*: Are reports on loan portfolio stress testing activities appropriate for the complexity of stress testing activities and the intended audience (e.g., board, senior management)?** Reporting is a key aspect of effective loan portfolio stress testing. The frequency and level of detail in loan portfolio stress testing reports may differ for the board and management but should include narrative comments summarizing key aspects of the process and results. At a minimum, a report on the annual, comprehensive loan portfolio stress testing activity should be provided to and discussed with the board. Reports should consider the following information:

    - The scope of work performed.
    - Key modeling and scenario assumptions.
    - Why certain risk factors were selected and stress applied.
    - How the scenarios capture the relevant and material risks.
    - The effects on credit quality, financial condition, and performance. At minimum, the annual loan portfolio stress test should show the effects of the stress scenarios over a 3-year horizon on the following:

        - Credit quality, including risk ratings (PDs and LGDs), nonperforming, and nonaccrual loans
        - Allowance for credit losses
        - Capital and capital ratios
        - Earnings and earnings ratios
        - Liquidity measures (including effects on General Financing Agreements and bank Contractual Interbank Performance Agreement scores)

    - Whether the institution is unduly vulnerable to certain risk exposures.

    - Limitations on model capabilities, stress testing processes, and results.

    - Why material or relevant risks were excluded in a given stress test activity, if applicable.

    - Recommended actions the board and management should take based on the results.

    - What contingency plans will be utilized if the stress scenario unfolds.

- ***Using Results:*** **Have results from loan portfolio stress testing activities been effectively considered in business planning and operational processes?** Loan portfolio stress testing results should be used to inform the business planning process, develop specific and actionable recommendations, and direct risk management activities. The most recent business plan should be updated from the prior business plan(s) to reflect current risks, the new stress scenario(s) applied, and how the stress testing results impacted business and contingency planning for the year. Recommendations from the loan portfolio stress testing report should represent specific, actionable items that will influence execution of risk management activities. At times, loan portfolio stress testing work may serve to validate that existing risk management practices are appropriate and should be continued. Possible actionable items from loan portfolio stress testing results may include the following:

    - Setting or adjusting portfolio parameters.
    - Modifying underwriting practices and standards.
    - Revising capital goals.
    - Expanding the use of Farm Service Agency, U.S. Department of Agriculture, Farmer Mac, and other guarantees.
    - Changing loan pricing practices.
    - Assessing human resource needs.
    - Revisiting business plan goals, strategies, and contingency plans.

For additional information, see FCA's Informational Memorandum on Stress Testing Expectations dated September 8, 2023, and Interagency Guidance on Stress Testing dated May 14, 2012. *Note: Examiners completing this procedure should focus on the specific stress testing activity; the overall stress testing framework is examined using the Stress Testing Framework procedure in the Direction & Control of Operations Examination Manual topic.*